

CLAIMS

1. A receiving device that performs reception in a service period of a broadcast signal and switches to a power saving mode in a non-service period, the service period being composed of a first period during which an application data table is transmitted and a second period, following the first period, during which an RS data table is transmitted, comprising:

a receiving circuit operable to perform reception in the first period to obtain the application data table, and perform reception in the second period;

an error correction unit operable to selectively perform first correction that uses the whole RS data table and second correction that uses a part of the RS data table, to correct a bit error in the obtained application data table; and

a switching unit operable to, when the bit error is corrected as a result of the error correction unit performing the second correction, switch to the power saving mode before the second period ends.

2. The receiving device of Claim 1,

wherein the application data table is made up of a plurality of bytes arranged in a matrix,

the receiving device further comprises:

a detection unit operable to, when the receiving circuit obtains the application data table, detect a position of each byte which has the bit error, in each row of the obtained application data table,

the second correction is erasure correction that, if the detection unit detects the position of each byte which has the bit error in the row, corrects the bit error by using a same number of parity bytes as bytes which each have the
5 bit error, and

the switching to the power saving mode by the switching unit is performed when, in the second period, the same number of parity bytes as the bytes which each have the bit error are added to the row.

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3. The receiving device of Claim 2,

wherein the first period is a period during which a plurality of transport packets generated by converting a plurality of data sections are transmitted,

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each of the plurality of data sections includes a column of the application data table and cyclic code for the column, the receiving circuit includes:

a section correction unit operable to correct the bit error in each data section by using the cyclic code; and

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a packet correction unit operable to correct the bit error in each transport packet which constitutes the data section, by using correction code added to the transport packet, and

the detection by the detection unit is performed by
25 specifying which column of the application data table the data section or the transport packet belongs to, when the section correction unit is unable to correct the bit error in the data section and the packet correction unit is unable

to correct the bit error in the transport packet.

4. The receiving device of Claim 2, further comprising:

a counting unit operable to count the number of bytes
5 which each have the bit error in each row of the application
data table, when the receiving circuit obtains the application
data table,

wherein if the number of bytes counted by the counting
unit is 0 in each row of the application data table, the
10 switching unit switches to the power saving mode before the
second period begins,

if the number of bytes counted by the counting unit is
no more than a predetermined number in each row of the
application data table, the error correction unit performs
15 the second correction, and

if the number of bytes counted by the counting unit is
more than the predetermined number in any row of the application
data table, the error correction unit performs the first
correction.

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5. The receiving device of Claim 1, further comprising:

a detection unit operable to detect information showing
a receiving environment of the broadcast signal,

wherein if the detected information satisfies a
25 predetermined condition, the switching unit switches to the
power saving mode before the second period begins, and

if the detected information does not satisfy the
predetermined condition, the error correction unit performs

one of the first correction and the second correction.

6. The receiving device of Claim 1, further comprising:

a detection unit operable to detect information showing

5 a receiving environment of the broadcast signal,

wherein if the detected information shows a first level,
the switching unit switches to the power saving mode before
the second period begins,

if the detected information shows a second level, the
10 error correction unit performs the first correction, and

if the detected information shows a third level, the
error correction unit performs the second correction.

7. An integrated circuit included in a receiving device that
15 performs reception in a service period of a broadcast signal,
for executing control of switching to a power saving mode
in a non-service period, the service period being composed
of a first period during which an application data table is
transmitted and a second period, following the first period,
20 during which an RS data table is transmitted, characterized
by:

switching to the power saving mode before the second
period ends when, among first correction that uses the whole
RS data table and second correction that uses a part of the
25 RS data table, the receiving device performs the second
correction.

8. A program used in a receiving device that performs reception

in a service period of a broadcast signal, for having a CPU in the receiving device execute control of switching to a power saving mode in a non-service period, the service period being composed of a first period during which an application data table is transmitted and a second period, following the first period, during which an RS data table is transmitted, characterized by:

having the CPU switch to the power saving mode before the second period ends when, among first correction that uses the whole RS data table and second correction that uses a part of the RS data table, the receiving device performs the second correction.

9. A receiving method that performs reception in a service period of a broadcast signal and switches to a power saving mode in a non-service period, the service period being composed of a first period during which an application data table is transmitted and a second period, following the first period, during which an RS data table is transmitted, comprising:

a receiving step of performing reception in the first period to obtain the application data table, and performing reception in the second period;

an error correction step of selectively performing first correction that uses the whole RS data table and second correction that uses a part of the RS data table, to correct a bit error in the obtained application data table; and

a switching step of, when the bit error is corrected as a result of the error correction step performing the second

correction, switching to the power saving mode before the second period ends.